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WEEKLY STATION REPORTS

OF THE DIVISION OF

DRY LAND AGRICULTURE

BUREAU OF PLANT INDUSTRY

U. S. DEPARTMENT OF AGRICULTURE

Not for publication without
prior consent of this division.

REPORT FOR THE WEEK ENDING JUNE 3, 1933.

HAVRE:

The week was the warmest of the season. All crops are growing nicely. Winter rye is headed and shows a heavy growth on fallow. Spring rye is shooting. All spring grains are tillering. Alfalfa in rows is unusually heavy. Crested wheatgrass has headed where there is sufficient moisture, but all domestic grasses need rain. Corn and flax are especially good at this time. Potatoes are coming up. Reports from the western part of the county are that grasshoppers have hatched in large numbers and are damaging spring grain in many places, especially where this crop is just emerging. Soil samples show moisture penetration in continuous cropping to a depth of approximately 16 inches and in fallow into the fourth foot. Persian lilac is in full bloom. Spirea Van Houtte is just starting, as are columbine and the most of the iris varieties. H.L. Westover was a station visitor on the 28th and 29th. Total rainfall for May was 2.00 inches, making the deficiency for the year to date .57 inches.

Maximum temperature, 91°; minimum, 39°; precipitation, 0.01 inch.

JUDITH BASIN: (Report for the two weeks ending June 3, 1933.)

Ideal growing conditions during the past two weeks have caused the rapid development of all vegetation. Crested wheatgrass and rye are beginning to show a few heads. Alfalfa is making a good growth, and with additional moisture the hay crop should be the best in years. New seedings of grass and alfalfa have emerged with good stands. Corn planted 10 days ago is just beginning to emerge. Hail storms occurred on May 21 and the afternoon of June 2. The latter storm was very severe, doing some damage to gardens and especially to the orchard. Most of the trees were in full bloom. The storm was accompanied by a heavy downpour of rain, which will be of great benefit to crops. H.L. Westover, Div. Forage Crops and Diseases, and Messrs. Morris, Twilde, and Wall of the Montana Experiment Sta. were recent visitors.

Maximum temperature, 87°; minimum, 34°; precipitation, 1.21 inches.

Precipitation for May, 3.11 inches.

HUNTLEY:

The weather has been warm. Frequent thunder showers have been received in parts of the county, but only one light sprinkle fell at the station. All crops have made a good growth, and, except for the wilting of alfalfa during some of the warmest periods, none of them have shown a need of moisture. Winter rye is heading, but heading is not uniform. Seedbed preparation for late crops was completed early in the week, and the remainder of the corn, soybeans, Sudan grass, and sorgho were planted. Spring pigs were weighed and placed on winter rye pasture. The first pasture weights were taken on the fall pigs in the alfalfa plots. They made excellent gains during the two-weeks period on alfalfa pasture. The season has been favorable for the production of palatable forage.

Maximum temperature, 93°; minimum, 37°; precipitation, 0.05 inch.

SHERIDAN:

The week passed without any rain of consequence, temperatures were considerably above the seasonal average, and wind movement continued high for this section much of the time. Grass and alfalfa made a rapid growth, spring grains made good progress, and fall sown grain seems now to be doing better than at any time this spring. All plot seedings were completed with the exception of late dates of seeding and sorgo in the rotations. Sudan grass also was sown in the pastures.

Maximum temperature, 89°; minimum, 33°; precipitation, 0.01 inch.

DICKINSON:

Good growing weather has caused rapid development of crops. A shower of 0.36 inch on the night of June 2 freshened all vegetation, as the surface of the soil was beginning to be dry. Fallow on the rotations was plowed May 3 and June 1. Rye and sweet clover green manure plots were plowed June 1 and 2. Both these crops had less than half a normal amount of growth, because of thin stands as well as a short growth of rye. Most of the trees were cultivated, and the grounds were mowed. Visitors during the week included E.J.George, Northern Great Plains Field Sta.; H.L.Westover, Div. of Forage Crops and Diseases; and J.R.Parker, Bureau of Entomology.

Maximum temperature, 90°; minimum, 40°; precipitation, 0.45 inch.

MANDAN:

Agronomy - The week was favorable for field work. The first real warm weather of the season occurred during the week. There were three hot days which dried the top soil out rapidly. A rain last night was of benefit to grasses, and to-day is cooler. Millets and sorghums were planted May 31. Plowing for fallow started June 1 and will be practically completed to-day. All plots were trimmed early in the week. The total rainfall for May was 1.83 inches or 0.59 inch below normal. With precipitation below normal for April and May, the chances for a good grass crop are greatly reduced.

Maximum temperature, 92°; minimum, 40°; precipitation, 0.48 inch.

Cooperative Grazing Experiment - Grass in the pastures is none too good. The cattle gained well during the first 15 days but not as much on the average as they did last year. The steers made the following gains during the 15 days in May:

<u>Pasture (acres)</u>	<u>Number of steers</u>	<u>Gain per head (pounds)</u>
100	10	69.0
70	10	69.5
50*	10	70.0
30	10	40.5
70 (Rotation)	14	58.6
28 (Bromegrass)	10	52.0
7 (Crested wheatgrass)	4	52.5

* Steers received nearly a half pound per head daily of cotton seed cake. The North Dakota Experiment Station hauled two steers to the packing plant at Fargo on May 31. These are to be butchered. It is planned to take two steers for butchering at the end of each month.

Arboriculture - Picking of American elm and Chinese elm seed has been completed during the week. The absence of a day free from wind has prevented us from planting any of the elm seed. All nursery fields have been cultivated and hoed during the week. Weed growth, particularly Russian thistles, has been making rapid headway the last few days. Conifer seed planted this spring has now all germinated, and the burlap covering has been

removed. All the tree nursery stock, with the exception of Northwest poplar, is now making rapid growth. The Northwest poplar cuttings appear to have heated in storage over winter, and the few that are alive show only a poor growth.

Horticulture - Winter injury notes are now being taken. Except for a few of the more tender varieties, apples and crabs came through the winter with but little apparent injury. This is also true of native varieties of plums. An exception was Terry, which suffered severe injury. Japanese and sandcherry hybrid plums, especially trees that bore heavy crops last year, show considerable killing back. Some of the F.P.I. plums from Australia were completely killed. Young plum trees generally suffered less damage than older trees that bore heavy crops last year. Thinning fruit reduced winter injury to Waneta plums. Native fruits generally passed the winter in good condition. Small fruits, such as currants and gooseberries, came through the winter in fair condition, but uncovered raspberries and strawberries suffered considerable injury. Young gooseberries in the west coulee also show severe killing back. Native fruits are generally showing a heavy set of fruit. This is also true of native varieties of plums, sandcherry-plum hybrids and currants, and gooseberries. Japanese hybrid plums will generally bear light crops this year. Apples and crabs are variable, some varieties setting good crops, and others showing but little bloom. Varieties that bore heavy crops last year are showing only light bloom and set of fruit this year. Softwood cuttings are now being made. A number of different species are being tested in this manner. The first hoeing of the orchards has started. The last of the plantings of flowers and vegetables on the grounds and in the field was completed during the week. The weather turned hot while tomatoes were being set out in the breeding project, and the plants were considerably damaged by a strong south wind that came up during the progress of the planting. It was necessary to water them immediately after planting. A half inch of rain fell on the 2nd and revived everything considerably. A fair stand is now looked for. The grounds have been a riot of color the last few days. The lilacs, particularly the Persian which is planted liberally on the grounds, were especially good this year. Other shrubs in bloom at the present time are Van Houtte spirea, Snowball, Sheepberry and Ginnala maple. Peonies are budding freely and promise an unusually fine display of bloom a little later. H.L. Westover, Div. of Foreign Crops and Diseases; and E.J. Thompson, Animal Husbandry Division, and M. J. Kirk, Farm Management, North Dakota Agricultural College, visited during the week.

BELLE FOURCHE:

The weather was comparatively cool during the first part of the week, but the last four days have been quite hot. Three light showers were received. A total of 11.12 inches precipitation has been received to date since April 1. Owing to the cool, wet weather, all crops are more backward than usual, but the recent summer temperatures have induced an abnormally rapid growth. Corn is up on most all plots. Spring-sown small grain is about 6 inches high, and winter rye has attained a height of 14 inches. Bromegrass is approximately 12 inches tall, and alfalfa has made a total growth of 8 to 10 inches. Sorgho plots were prepared for seeding, and sorgho and potatoes were planted late in the week. Flax, wheat, barley, and corn were replanted on most of the plots where the original stands were destroyed by the heavy storm of May 22. A few of the wheat plots are still too wet to work, and a little hand replanting of corn remains to be done, but otherwise all seeding has been completed. Roadways were staked out, and trimming of plots will be completed June 3. Maximum temperature, 94°; minimum, 41°; precipitation, 0.30 inch; May precipitation, 7.61 inch.

ARCHER: The weather was mild to warm.

The wind consisted of gentle breezes. Plant growth has been rapid in most cases. This is especially true with regard to grasses and alfalfa, which are now in need of more rain. Spring grains are beginning to show green, and corn is emerging. All seeding in the experimental field has been done, except the late dates-of-seeding and the seeding of millets and Sudan grass. Twenty acres in the dairy field remain to be seeded to Sudan grass and small grains. Owing to the unfavorable spring, considerable land will be fallowed. Maximum temperature, 85°; minimum, 36°; precipitation, none.

AKRON:

The week was favorable, and good progress was made with current field work. The rotation fallow plots were plowed, and the corn, soybean, and grain sorghum varieties were planted. Date seedings of beans and prosos were made on the 1st. Weeds have started into active growth, and it has been necessary to work all open ground the past two weeks. Other work consisted of shearing the 40 odd head of ewes, cultivating forestry experiment 2, and seeding the soy bean and sorgho plots on the rate and spacing corn project. Vegetation has sprung into vigorous growth during the past seven days. Corn, sorgho, and beans seeded about the 20th have emerged promptly to excellent stands. Ground squirrels have been active on the rotation corn plots, and one plot was reseeded. Rye is jointing, and peas stand about 8 inches tall. These plots will be plowed next week.

Maximum temperature, 88°; minimum, 43°; precipitation, trace.

NORTH PLATTE:

Weather for most of the week was dry and warm. The top soil has become quite dry. Small grains have not fully recovered from the storm injury of May 22. First heads are appearing on winter wheat, and spring grains are jointing. Seed beds for sorghum and milo have been prepared, and seeding is being done to-day, the 3rd. Corn on the D.L.A. plot is growing rapidly and will be ready for first cultivation and thinning during the coming week.

COLBY:

The weather has been dry as well as very drying this week. There was a light shower accompanied by a smattering of hail on the afternoon of May 27. Since then it has been fairly windy and hot most of the time, so that soil moisture has been dissipated rather rapidly, and where wet soil has been turned up it has baked hard. Rain has threatened nearly every day. The sorghums were planted May 29. The soil was in ideal condition. On the surface planted plots the seed seems to be germinating, but on the listed plots the soil has dried out in the seed bed in many places and the seed is in dry ground, unspouted. The corn has been thinned and the alleys cultivated. Some of the spring small grains are beginning to head. They are still very short. Considerable differences in growth are beginning to show up in the small grain plots.

Maximum temperature, 89°; minimum, 40°; precipitation, 0.22 inch;

May precipitation, 2.56 inches.

GARDEN CITY:

Planting row crops, corn, sorghums, and cowpeas, was finished on June 1. The soil was in excellent condition and seems to have sufficient moisture in the furrow slice for normal germination of the seed. Wheat is in need of more moisture and shows some firing. The severe windstorm of May 22 tip burned all the wheat and caused much of it to appear wilted and show a brown, burnt appearance. Barley and small grains seeded this spring seem to be standing still and making no growth whatever. Much of the barley is beginning to show heads at not over 6 inches in height. The general complaint of all farmers is that weeds are growing faster than the barley, and in a few days barley fields will be a mass of weeds. This condition is rather general on most of the plots of the station. The last ten days have been a battle with weeds. Maximum temperature, 93°; minimum, 46°; precipitation, trace.

HAYS:

Very dry, hot weather has prevailed throughout the week. Two or three days heavy wind under these conditions have further reduced the prospects for a wheat crop. It is impossible at this time to predict what the outcome may be. The wheat is burning on nearly all the plots regardless of method. The supply of moisture in the soil is practically exhausted, and the crops are now wholly dependent upon the weather. Oats and spring wheat are still without seed stalks and are burning. Barley is sending up a few scattered seed stalks, but the prospects for a crop of barley are small. Only on fallow does there appear to be a chance for a crop of oats, spring wheat, or barley. Peas have barely commenced to make vines and are suffering from dry weather. Newly seeded alfalfa is wilting but still shows promise of coming through with a good stand. The growth of alfalfa on the sod plots is about 8 inches high and drying up. Bromegrass has made a small spreading growth but now is at a standstill. Corn and sorghums were planted on the project June 2nd and 3rd.

Maximum temperature, 96°; minimum, 40°; precipitation, none.

TUCUMCARI:

A rain of 1.11 inches on the night of May 31 brought the total for 1933 to date to 1.78 inches and permitted field work to start. The past two days all available power and equipment have been covering fields as rapidly as possible. It is hoped some cooperative plots can be planted to-day, June 3. Next week every effort will be made to plant practically all plots with the exception of late dates. Trees and lawns have revived considerably since the rain. Before this, their condition had steadily declined since mid-April. Grapes carried a fair load of blooms, but the dry, windy weather caused a very high percentage to fail to set. Indications point to the lightest grape crop of any year since vines came into full bearing. No plants were entirely killed by the severe cold weather followed by prolonged drought, but a few mature vines were killed to the ground, and some others lost all 1932 wood. Reports from many who obtained cuttings this spring at the station indicate that most cuttings were placed near tank overflows and that a majority are living. Some 6,000 cuttings were given persons over a radius of 120 miles. J.R.Horton, Bureau of Entomology, Wichita, Kans., spent three days at the station in connection with the cooperative work with Southwestern Corn Borer. Maximum temperature, 96°; minimum, 52°; precipitation, 1.11 inches. May was the highest May in wind movement since 1918 and second highest May on record in evaporation.

DALHART:

The total precipitation for the first five months of the year is 1.11 inches, and for the eleven months, July to May it is 7.59 inches, which is less than one-half the normal for the same period. Severe dust storms of relatively short duration occurred during the week. The strongest wind of the year was about mid-night of the 31st. This straight wind was of sufficient velocity to break large limbs from trees, unroof small buildings, and make other buildings seem unsafe. The temperature reached 100° June 2, and just after noon June 3 the thermometer stood at 101°, with a wind of sufficient velocity to carry clouds of dust at times. Many trees, including Chinese elms, have as yet failed to leaf out because of the drought. The leaves on those which are partly leafed out appear to be scorched June 3. The June 1 date-of-planting plots were purposely omitted.

Maximum temperature, 100°; minimum, 45°; precipitation, 0.04 inch;

May precipitation, 0.80 inch.

BIG SPRING:

Weather conditions have been favorable for field work during the past week. Hot winds have prevailed most of the time and have been drying the soil out very fast. A large part of the county is still waiting for rain to start planting, although some farmers are dusting their seed in. Most of the farmers in the northern part have been planting all the week. If the cotton emerges, it is doubtful if the young plants can withstand the hot winds that are prevailing, unless more rain is received in the near future. Plowing, disking, harrowing, planting, and harvesting have occupied the station force during the past week. Winter wheat plots were harvested May 29. A yield of 6 to 10 bushels per acre will probably be obtained. The June 1 date of grain sorghum, forage sorghums, and cotton was planted. Cotton varieties and spacing and cotton in the rotations was also planted during the week. An increase field each of Sudan grass and milo was also planted. Maximum temperature, 102°; minimum, 63°; precipitation, none.

LAWTON: (Report for the two weeks ending June 3, 1933.)

Small grains approached maturity rapidly under favorable weather conditions the past two weeks. A rain of 0.93 inch on May 23 provided sufficient moisture to fill wheat in good shape as it matures. Very moderate to cool temperatures during this period have also been favorable to all small grains. Winter barley matured a very light inferior crop that was harvested May 29. Wheat varieties harvested May 29 to June 3 include in the order of their maturity Nebraska 28 and Early Blackhull; Prelude x Kanred and Hard Federation x Kanred Nos. 2671 and 2673, and Kawvale; Curell and Fultz. Three rotation plots of oats and a 10-acre field of oats grown for feed were also harvested this week. About one-half of the field was put up as a hay crop. The third planting in the chinch bug sorghum resistance project was made May 30. Thinning of the second date and most of the rotation plots of kafir, feterita, broomcorn, and sorgo is also pretty well completed. Several replanted plots are yet too small to thin advantageously. Corn is in a vigorous, growthy condition and nearly too large to cultivate. A few of the early varieties are silking and tasseling. The heavy rains in May and the ensuing cool weather has not been at all favorable to cotton. Replanting has been quite general throughout this part of the State. This late replanting has emerged slowly and unevenly, and extra cultivation has been necessary to control weed growth. About 50 farmers assembled at the station on the afternoon of May 26 to observe small grain crops and study

past results. The crowd manifested a keen interest in the experiments and freely expressed themselves as well pleased with the opportunity for such observations. K.S. Quisenberry, Division of Cereal Crops and Diseases, was a station visitor May 30 and 31. May precipitation, 5.46 inches.

WOODWARD:

A week ago it seemed that wheat on the station on early fall plowing and on fallow might yield 20 to 40 bushels. But there has been no rain the past week and several days with moderately high winds and temperatures. On variety wheats which were planted early and are nearly ripe, the seed has shriveled badly. On rotation wheats the chief damage so far seems to be to the leaves, most of which have died. The heads, which are in the dough, still seem plump, and the straw is green. It is doubtful whether a rain would result in normal maturity of plump grain, or whether an appearance of scalding would result, with deadening of the straw and shriveling of the grain as sometimes happens. Alfalfa fields are bare and brown, having made no growth since the first scant crop was cut. The earlier cherries were picked during the week. Early planted sowed feed is making little growth and will be very weedy. Several species of tamarix are in bloom. They make a pretty show with their plumose foliage and dainty pink and red blossoms. *T. hispida* which grows to only 4 feet is becoming popular because it does not get out of bounds. *Yucca filimentosa* with its columns of creamy blossoms is a striking feature of the landscape. It makes a rapid growth from seedlings or seed. The red yucca winter killed badly. The Mexican term for yuccas, "Candles of the Lord" seems fitting. *Acer pictum* mono, or painted maple, *Hemiptelia Davidii*, a small tree, and *Kolkwitzia amabilis* or beautybush seem among the most promising of the newer woody plants.

Maximum temperature, 94°; minimum, 48°; precipitation, none.

PENDLETON:

The fallow plots on the rotation and tillage have been gone over with a rod weeder. The sweetclover and forage grasses were cut for hay. The fall sown crested wheatgrass was cut this week in an effort to prevent the seeding of the Curly mustard. Considerable time was spent hoeing and pulling "Jim Hill" mustard out of the rotation and tillage plots. All crops are growing rapidly. The temperatures the past week have been consistently higher than those of the previous week. The field and garden peas trials look especially good this year, with a big vine growth and thrifty appearance. The Alaska garden peas are in full bloom. The stands of wheat are heavier than usual, owing to the stooling of the spring wheat. As a rule our spring-sown wheats do not stool heavily. Practically all the spring barleys in the cereal nursery are heading.

Maximum temperature, 83°; minimum, 32°; precipitation, none.

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REPORT FOR THE WEEK ENDING JUNE 10, 1933.

HAVRE:

The week was dry, and native grasses and crops that are well advanced are beginning to need rain. Spring sown crops, especially those sown on fallow, are growing rapidly. Winter rye is in flower. Rye and sweet clover for green manure have been plowed under. Alfalfa on dry land will be ready in the next few days for hay. Irrigated alfalfa is heavy and should be ready for the mower in about ten days. All grasses and alfalfa in close drills are burning. Maximum temperature, 87°; minimum, 45°; precipitation, 0.32 inch.

JUDITH BASIN:

The weather for the week was cool and cloudy with light showers on two days. Owing to the continued cool weather, crops are slightly behind average growth for this season of the year. Corn on the rotations is up with good stands, although cutworm damage will make some reseeding necessary on a few plots. Work during the week included trimming plots, cleaning weeds from alleys and roadways, duckfooting summer fallow land, and cultivating the orchard and shelterbelt.

Maximum temperature, 77°; minimum, 38°; precipitation, 0.13 inch.

HUNTLEY:

All crops have grown well during the week. Corn, sorgo, Sudan grass, soybeans, and sunflowers in the late plantings are coming up. The corn planted on the regular seeding date has emerged and most plots have a good stand. Alfalfa is beginning to blossom, and cultivated grasses are in full head. A torrential shower with some hail was received on the evening of the 6th. The hail did a little damage to corn and beans on the dry land fields, but the greatest injury to crops as a result of the storm was the packing and crusting of the soil in plots having seedlings just ready to emerge. Unless a shower is received soon to soften this crust and let the young plants through there may be some loss of stand. Where conditions have permitted, crusted plots have been given a light harrowing to loosen the surface. Much of the moisture from the shower was lost through run-off. Field work during the week has consisted of duckfoot cultivating roads and miscellaneous fallow plots, harrowing corn and row crops, and cultivating alleys. A start has been made in plowing under rye for green manure and plowing for fallow.

Maximum temperature, 87°; minimum, 44°; precipitation, 0.95 inch.

SHERIDAN:

Fair weather continued over the entire week, and temperatures were considerably above the average for the season. There were indications of showers almost daily, but none materialized. Most crops appeared to be making only a slow growth. Only alfalfa and flax appeared to be making a growth in proportion to the amount of moisture available below the surface. Corn emerged early in the week with a good stand, except in the rotations on plowing done after the heavy May rains. The surface dried rapidly during the last two weeks, and much of the seed of all crops sown late, on plowing done after the rains, is in dry soil. Plowing for fallow and green manure was done during the week, except for plots in field peas and two fallow plots to be plowed later. All corn was gone over with the rotary hoe. Seeding of Sudan grass, sorgo, and dates of seeding grain and flax were completed.

Maximum temperature, 87°; minimum, 46°; precipitation, trace.

DICKINSON:

Crops made fair progress as a result of moderate temperature and light showers. Rain is now needed for hay and pasture crops. Small grains and corn are still making good growth. Alfalfa has made a rapid growth and will be ready to cut next week. Old stands of crested wheatgrass and brome-grass are heading fairly short. Slender wheatgrass is standing still because of dry soil. Corn on the rotations was harrowed and cultivated, and thinning of the stands was started. Corn stands are generally good, and the fields are fairly clean. A few corn fields in the locality are green-ing up with wild oats and pigeon grass. The orchard and hedges were spray-ed. Visitors included, C.R.Enlow, Forage Crops and Diseases; and J.M. Stephens and F.W.Mason, Mandan.

Maximum temperature, 88°; minimum, 44°; precipitation, 0.17 inch.

MANDAN:

Agronomy - The past week has been warm with little rain. Small grains are beginning to show the effects of the dry weather. The chances for a seed crop of crested wheatgrass are greatly reduced. Corn was given the first cultivation and is now being thinned. Gophers damaged a few plots in the south field so that spots had to be replanted. Roadways were mowed and a few small areas were cut for hay. It will be necessary to start haying next week.

Maximum temperature, 90°; minimum, 48°; precipitation, 0.10 inch.

Cooperative Grazing Experiment - Native vegetation is holding up fairly well but is making little growth. Crested wheatgrass and brome-grass are in good condition for grazing. Cattle are gaining rapidly.

Arboriculture - Work during the week has consisted of planting American and Chinese elm seed, cultivation of test blocks of trees, and hoeing. Hardwood trees are now all in full leaf and show very distinctly the amount of killing which took place last winter. All species of birch suffered heavy top to complete killing. A number of quaking aspen trees killed out entirely. A number of trees of English elm killed back to about half their height. This block was planted in 1924 and has shown no winter injury in previous years.

Visitors during week included C.R.Enlow, Forage Crops and Diseases, and E.M.Gillig, Fargo, N.Dak., State Seed Department.

BELLE FOURCHE:

With the exception of one day which was cool and cloudy, the week has been dry and comparatively hot. The soil is drying out very rapidly. From May 26 to June 7, there was a reduction of 5.5 to 7.3 per cent in the moisture content of the first foot of soil on the continuously cropped spring wheat plots. A slight decrease also occurred in the moisture content of the second foot, but this was offset by a corresponding increase in the third foot of soil. Moisture has penetrated to a depth of approximately 3 feet. All crops have made a very rapid growth. Winter rye and brome-grass are heading, and spring-sown small grain is about 10 inches tall. Listed corn is emerging. Sorgo and reseeded flax are up, but owing to the lack of moisture in the surface soil the stands are not so good as usual. Field work has included the cultivating of roads, alleyways, corn, and sorgo. Fallow plots were manured, and replanting of corn and spring wheat was completed.

Maximum temperature, 90°; minimum, 41°; precipitation, none.

ARCHER:

During the past week the weather was warm with some cloudiness. Conditions have been favorable for plant growth. Corn has produced a good stand, and beans are emerging. The small grains are making a good leaf growth. Work has consisted of planting potatoes, seeding millet, and cultivating trees. A 40-acre field was seeded to crested wheatgrass and yellow sweet clover. The only seeding remaining to be done is about ten acres of Sudan grass in the dairy field. F. Johnson, U.S. Forest Service; W. J. Morrill and R. E. Ford, Colorado Agricultural College; W. O. Edmondson, University of Wyoming; A. C. Hildreth and J. L. Emerson, Cheyenne Horticultural Field Sta., and County Agent E. O. Johnson visited the station during the week. Maximum temperature, 83°; minimum, 41°; precipitation, 0.45 inch.

NORTH PLATTE:

Weather features of the early part of the week were high temperatures and several severe storms. Maximum temperatures were in the upper nineties from the 3rd to the 7th. Storms occurred in the evenings of the 5th and 6th. Wind damage was not so bad as that of May 22, but several trees were uprooted on the station and some small buildings were blown over. Hail, which was severe north of the station, broke only a few windows here, did minor damage to crops on the bench, and did not reach to the table. The rainfall from the two storms at the station was 0.65 inch. While this came as a sudden downpour, there was not enough of it to do much damage by washing. H. L. Westover and H. M. Tysdal of Division of Forage Crops and Diseases were station visitors to-day, June 10.

AKRON:

Another week of warm weather with a minimum of weather interference with field work. Spring grains present a very attractive appearance. Barley on the rotations is practically in head. There has been no visible injury from shortage of moisture as yet, but a good soaking rain is needed. Beans, soybeans, grain and forage sorghums seeded June 1 to 3 have emerged to excellent stands. This has been an exceptionally favorable spring for securing stands of the late spring seeded row crops. The millets and the potatoes were seeded in the rate and spacing corn unit. Current date seeding of corn was made on the 5th. Green manure rye plots were plowed under. All station alleys and roadways were cultivated. Rotation and rate and spacing corn and all winter wheat plots with the exception of those on the rate and spacing corn land were spike-tooth harrowed. The forage and grain sorghum nursery was seeded early in the week.

Maximum temperature, 92°; minimum, 51°; precipitation, 0.51 inch.

COLBY:

This was a hot week. The maximum temperatures ranged between 92 and 104. At times it has been quite windy. June 4 was a day when the wind was typically hot. Dust filled the air most of the time on the 6th and 7th. All small grains have suffered considerably from a lack of moisture and the heat. On the plots all the small grains are almost dried up, except those on fallow. Three oats plots are headed out at about a foot high. The fallow plot of barley is almost headed. The other barley and oats plots are showing heads only here and there. The spring wheat is just beginning to head. Corn is making a good growth. The sorghums came up to good stands in spite of the hot drying weather. They are not making much growth, however. They were all thinned this week. The roadways have all been gone over with a grader. The ground is dry and hard on top, but there is ample moisture underneath where

there are no weeds or crop.

Maximum temperature, 104°; minimum, 49°; precipitation, 0.01 inch.

GARDEN CITY:

Field work consisted of cultivating fallows, planting milo, and general tillage work. Ground is getting very dry, and germination of newly planted kafir and milo is slow. Some plots are coming up to fair stands, others are very spotted. Some of the milo and kafir will not germinate until we get rain. The past week has been quite severe on growing crops. Unusually high wind velocity the 5th, 6th, and 7th took a lot of moisture and caused the wheat to fire considerable. All wheat on the project is prematurely ripening, due to the hot, windy weather. Some of it will be quite short and produce poor yields. Fallows are standing up well. Spring grains have about turned out to be total failures. Barley, oats, and spring wheat in most cases are from 6 to 8 inches high, and some are burnt to a dirty brown color.

Maximum temperature, 101°; minimum, 62°; precipitation, none.

TUCUMCARI:

This has been the first week of real summer temperature, and it is questionable how long surface moisture from the only real rain in eight months, received May 31, will last. Every effort has been made to prepare and plant as much of the plot land as possible, but work is still far behind. Very little early preparation of plots and increase land could be done until rain was received, so normal May field work was delayed until June. The past week land was prepared and planting made of grain sorghums, forage sorghums, corn varieties, peanut varieties, M.C. plots, new rotation plots, and the Sudan grass pasture. Tillage work to kill weeds and prepare land for planting was done on balance of the rotation plots and most of the increase land. A large amount of planting remains to be done. For the first time in over two years the station well sanded down, requiring the labor of three men for two days before it was finally working satisfactorily. The past eight days the station force have been on "stagger" hours in order to keep tractor and teams going full six days a week.

Maximum temperature, 101°; minimum, 52°; precipitation, 0.04 inch.

DALHART:

The dry weather and soil blowing continues but there has been a tendency towards a let up in the frequency of the high winds. Ranges are dry and the cattle are being moved out of this section. There is practically no roughage left for feed. The range and farm cattle are losing flesh daily. The drought situation has become an acute problem or, as is universally proclaimed, it was gotten serious. We could still raise feed if it rained the last of this month, but a grain crop is needed. With most of our sorghums we are not usually safe in planting after the 20th of the month. In spite of this, recommendations are being asked for varieties to plant even in July in case a rain does not come until then. Past records indicate that a low spring rainfall, i.e., much below normal, indicates an unprofitable crop one-half of the time. Never has this country failed to get moisture for germination of sorghums; either in May or June. Many are beginning to feel that this year may be the exception. The rainfall for the spring of 1927 is the most recent comparison to this year. That year the drought was broken on the 12th of June. The situation can change over night, but another week will settle the fate of a large percent-

age of farmers in this section of the Panhandle.

Maximum temperature, 102°; minimum, 49°; precipitation, 0.01 inch.

BIG SPRING:

Dry, hot weather has prevailed during the week. The highest maximum for the year was recorded on June 3, when the thermometer registered 106°. These high temperatures and the wind have been drying the soil out very fast. Cotton is emerging slowly, but it can not last long unless more rain is received in the near future. With the exception of the later dates of grain and forage sorghums and cotton, all experimental planting was completed this week. One block each of increase milo and Sumac sorgo remain to be planted. Sorghums planted June 1 have emerged with uneven stands, and cotton planted on the same date is just coming through the ground. About two-thirds of this county, consisting of that portion laying south and west of the station, is still waiting for the first rain of any value this year.

LAWTON:

No rain of any consequence has been recorded since May 24, and the high temperatures since June 3 have created a definite need of additional moisture. Row crops have made a rapid growth and the soil is hard and dry. In some instances it is too hard and lumpy to cultivate. Corn on land that was spring plowed and top-dressed is tasselling, but that on listed land and on fallow is not nearly so far advanced. Sorghum thinning was recently completed, and most of the row crops have been cultivated. The rotation plots of sorghums are not carrying a heavy infestation of chinch bugs. Harvest of small grains except a few plots was completed June 8. Nine and one-half tons of alfalfa were baled and stored in the barn during the past week. So far, about 22 tons of alfalfa and oats hay have been baled and put in the barn this year. About 0.4 of an acre of Madrid Yellow Blossom No. 27474 sweet clover was harvested as a seed crop June 10. This clover grown in paired rows 31 inches apart set a heavy crop of seed, and the harvest was very satisfactorily accomplished with the row binder. C.P. Blackwell, A. & M. College, Stillwater, Okla., was a station visitor the 7th.

Maximum temperatures June 3 to 10 ranged from 91° to 99°, averaging 95°.

WOODWARD:

Five days of the past seven the thermometer has registered over 100° with the maximum for the week 109°. Winds have been moderately high. Wheat still gives promise of fair and even average yields on the better prepared plots. On those prepared later, it will yield practically nothing. On plots planted late it will likely be injured more than on plots planted October 27, as most of them were. Soil is still dry, so there is little use in farmers planting row crops. On the station few plots have yet been planted to either sorghums or cowpeas. The latest date at which these crops can be planted with assurance they will mature is June 15. On the rotation plots, where soil conditions vary so from plot to plot, it seems better to wait for rain than to plant them in their present condition, with almost a certainty of partial germination and broken stands. If planted later than they can safely be expected to mature, they will be planted a little more thickly than usual, which will tend to hasten maturity. The thicker stand may also yield much more in case heavy rains are received to compensate for the present drought. The flowering willow is now a flowing mass of bloom, and the Tatarian and Morrow honeysuckles are glistening with red and yellow berries. Among the herbaceous perennials, Stokes Aster is outstanding. It has a superabundance of blossoms over a long period. Others which are especially valuable at this time are Butterflyweed (Asclepias tuberosa),

Fernleaf yarrow (Achillea filipendulina), Kelway camomile (Anthemis kelwayi), Pyreanese chrysanthemum (Chrysanthemum maximum), Mealycup sage (Salvia farinacea). Work of the week consisted of picking cherries, hoeing weeds, pruning dead wood out of mulberries and Chinese elms, road work, and the incessant watering of plantings made this spring.

PENDLETON:

The work on the station the past week has consisted chiefly of pulling "rogues", hoeing weeds, and cultivating corn. The alfalfa in the varietal trials was cut on the 6th, just in time to be thoroughly soaked by 0.59 inch of rain on the 7th to 10th. The weather the past week has been very favorable for crop growth. The spring barleys are practically fully headed, and spring wheats are heading rapidly.

Maximum temperature, 79°; minimum, 39°; precipitation, 0.59 inch.

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WEEKLY STATION REPORTS
OF THE DIVISION OF
DRY LAND AGRICULTURE
BUREAU OF PLANT INDUSTRY
U. S. DEPARTMENT OF AGRICULTURE

JUN 17 1933

REPORT FOR THE WEEK ENDING JUNE 17, 1933.

HAVRE:

Two station records were broken during the past week. A minimum of 37° on the 10th is the lowest for this time in June, and the maximum of 104° on the 16th is the highest. There was considerable damage to crops during the week. Winter grain on stubble is seriously hurt. Aside from that on the station, there is very little winter grain on fallow in this section. Early spring grains on poorer methods are also suffering very materially. In this section, some of this land is being cultivated and will be used as fallow. Spring grains on good fallow land are still in very good shape, and with rains could make a good yield. Corn made very good growth. Alfalfa, grasses, and winter rye on dry land were cut. The yield of winter rye is very good, being around two tons. Spring rye is beginning to head and other spring grains are shooting rapidly. On the prairies, the native grass has entirely ceased to grow and in many instances is almost dry enough to burn. The early growth of grass, however, was very good.

Maximum temperature, 104°; minimum, 37°; precipitation, trace.

JUDITH BASIN:

Hot, dry weather prevailed during the week. The maximum temperature recorded on two days was 92°. Winter wheat is in the boot and will be heading within the next few days. Moisture is needed for this crop now. Native sod pastures are beginning to show the effects of lack of moisture. Alfalfa is suffering a little from drought at this time, but crested wheatgrass is as yet undamaged. Spring grains are not suffering as yet, but moisture is needed for all crops. Work on the station included improving and gravelling the livestock lots, laying a water line to livestock lots, repairing haying machinery, and cultivating the shelter belt.

Maximum temperature, 92°; minimum, 48°; precipitation, 0.09 inch.

HUNTLEY:

The hot, dry weather of the last week has been reflected in the wilting and burning of small grains on the dry-land fields. Oats and winter wheat are heading on short straw, but spring wheat and barley have yet no sign of heads. Peas and flax are in full bloom. Plowing of rotation fallows and of rye for green manure was completed early in the week. The fallow land plowed easily and worked down fairly well. The winter rye plots were dry and turned up cloddy and uneven. All alleys and row crops were cultivated and fence rows were hoed. Haying operations have been in progress throughout the week, the warm and dry weather being conducive to rapid curing of the crop. The handling of the hay was further expedited through the use of a side-delivery rake and a tractor drawn hayloader for removing the crop from the larger plots. Hogs on the pasture experiments were weighed during the week. All lots made fair gains notwithstanding the warm weather and poor quality of forage available.

Maximum temperature, 101°; minimum, 51°; precipitation, none.

SHERIDAN:

Hot, dry weather continued over the entire week. The condition of crops deteriorated, although corn and late forage, where it has emerged, made a good growth. Winter wheat and early sown Vaughn barley are beginning to head, and alfalfa is in blossom. Sweetclover, and some crested wheatgrass where mixed with volunteer sweetclover, were cut for hay. The sweetclover

in plots was very poor, the crop having winterkilled entirely over large areas, and the remaining stand making only a short growth. There appeared to be a fair stand of most of that crop last fall. While there were no extreme temperatures the average mean temperature for the first 15 days of June equalled the highest yet recorded at this station. No rain of consequence has fallen since May 22. Hot weather immediately following the heavy rains of May baked the ground badly. Even where well cultivated, the ground is cracked beneath the surface almost as badly as it usually is at harvest time. Land plowed since the rains and worked immediately dried out almost to the depth plowed.

Maximum temperature, 96°; minimum, 48°; precipitation, none.

MANDAN:

Agronomy - The past week has been hot and dry with hot winds on two days. Crop prospects were greatly reduced. All crops show the effects of the heat and drought. Some of the poorer methods of tillage are now beyond recovery. Corn is still looking good. Most of the week has been spent in haying. The yield of hay will be light, but the quality is good.

Maximum temperature, 102°; minimum, 43°; precipitation, 0.08 inch.

Cooperative Grazing Experiment - Grazing conditions were reduced during the week. Grass is drying up rapidly. The prairies are now brown. The heavier grazed pastures cannot last long. The grazing conditions are about as poor as they were in 1926.

Arboriculture - Work during the week has consisted of hoeing in the nurseries and various tree plantings, spraying caragana seedlings and young hedges, and watering seed beds. There is a heavy infestation of blister beetles which are eating the young growth of caragana and other tree species as fast as it appears. A mild infestation of canker worms has also appeared during the week in the cultivation and pruning experiments. The extreme heat of the past few days has done considerable damage to small nursery stock. Constant watering and shading has saved most of the conifer seedlings in seed beds. Transplant stock has suffered severely; a large number having withered up completely.

Horticulture - Most of the week has been spent in removing dead wood from the trees in the various orchards and arboretum. Killing back was severe as compared to most years, and the amount of dead wood was greater than usual. Pruning wounds were covered with grafting wax. Seedlings resulting from hand crossing work were transplanted from the seed flats to the seed beds and nurseries. More of these crossed seeds have germinated than in any previous year. The hot, dry weather of the recent past has been very trying on all horticultural plantings. Strawberries are ripening, but the berries are small and the quality is poor. There is a very good stand of sweet corn selections, a fair stand of tomatoes, and fair to poor stand of melons. The gardens are still looking quite promising as to yields, but moisture is needed badly. Spinach, radishes, and head lettuce have been yielding very well to date; Alaska peas and Calabrese are almost ready for harvesting. Few insect pests have been noted so far. Nearly all bloom on shrubbery is now past. Peonies have been very fine this year, but the hot weather has shortened their period of bloom rather markedly. Some of the newer varieties most outstanding in size and beauty were: White Kelwoys, Glorious and Le Cyque, Pink Therese and Georgiana, Shaylor, Red Karl Rosenfeld, Longfellow, Mary Brand, Martin Cahusse. Older varieties such as Fisher's maxima, Edutes superba and Felix Crousse also showed up very

well. C.F. Munro, Director of Agricultural Extension, North Dakota Agricultural College, visited the station on the 15th.

BELLE FOURCHE:

The hot weather, warm winds, and a vigorous plant growth have caused an abnormally rapid depletion of soil moisture. Spring wheat on the continuously cropped plots has used most of the available moisture in the first two feet of soil, and all small grain crops will begin to burn if the hot, dry weather continues unbroken for another three or four days. Barley and oats are on the verge of heading, potatoes are emerging, and replanted corn and small grain are up. Bromegrass, alfalfa, and sweet clover were harvested for hay. High yields of bromegrass were obtained, but the yields of alfalfa and sweet clover were below normal, owing to poor stands. Winter rye, peas, and sweet clover were turned under for green manure, and all fallow plots were plowed and disked. Graveling of station roads about the buildings and to the public highway has been completed.

Maximum temperature, 96°; minimum, 50°; precipitation, 0.55 inch.

ARCHER:

During the fore part of the week temperatures were lower with some cloudiness. This condition again changed to warm weather the last two days of the week. Rain is needed. The crested wheatgrass is burning, alfalfa has reached a standstill, and other crops would be greatly benefited by a good rain. Work at the station has consisted of lining the roadways, cultivating and hoeing trees, and tilling fallow plots. The rotation corn plots are being cultivated. The Laramie County 4-H Clubs, under the leadership of State Club Leader B.W. Marston and County Agent E.O. Johnson, spent the afternoon of June 16 at the station.

Maximum temperature, 91°; minimum, 44°; precipitation, trace.

NORTH PLATTE:

The week has been severe especially for spring sown small grains, which are just coming into head. Temperatures were moderate early in the week, and two showers with 0.57 inch precipitation furnished some relief. For the past four days however, temperatures have again been high. Winds have been strong and persistent, and evaporation has averaged 0.400 inch per day. Row crops have made rapid growth. Alfalfa has been dry enough to stack on the day following cutting. The last of the first crop is being stacked to-day, the 17th. The crop is of good quality and the yield good. Corn has been thinned on the D.L.A. project, with all plots having full stands. Plants are 6 to 12 inches in height and will be given the second cultivation during the coming week.

AKRON:

The heat wave was broken the 12th by a cold east wind. Weather gradually warmed until the 16th when the maximum temperature was 90°. Barley on the rotations is in full head and filling. Oats are heading unevenly. Sowed crops are greatly in need of rain. Open ground still carries plenty of moisture just under the surface. Rowed crops are making excellent progress, and weeds are easily controlled. Green manure pea plots were plowed under early in the week in first bloom stage. Other work was the cultivation of the rotation corn, sorgo, and kafir plots and the variety sorgo and grain sorghum. The hoeing of the cereal nursery was completed. The rotation and rate and spacing corn stands were counted, and the first

replication of the latter was thinned. L.W.Boyle, Cereal Crops and Diseases, spent the last two days of the week at the station in the interest of winter wheat foot rot investigations.

Maximum temperature, 95°; minimum, 50°; precipitation, 0.03 inch.

COLBY:

The weather continues dry and windy, but not quite so hot. A hot wind is blowing to-day, the 17th, however. All crops and pastures are drying up rapidly. Of the spring small grains, only the plots on fallow have headed and still have a chance to make anything. Corn is making rapid growth, but the sorghums are struggling to get started. The sorghums are up to good stands, but the plants do not act as if they are well rooted. The fallow plots to be plowed in June were plowed on the 15th. Those which had been previously worked had ample moisture, but those which were in stubble were weedy and dry. The peas dried up completely at about 6 inches and were also turned under that day as were the rye plots. The rye plots showed scattering stems of rye about a foot high, and the barley was about 4 inches high. The barley was seeded on the rye plots the last of April and was beginning to dry up without heading. The ground turned up dry. The corn was cultivated on the 16th. On most plots it was from 4 to 8 inches high. The weeds consisted mainly of scattering thistles. It has not rained since the corn was planted, and the surface was dry and cloddy. In places on the surface planted plots the cultivator turned up big chunks. The soil has ample moisture underneath. E.F.Chilcott visited the station the 15th.

Maximum temperature, 101°; minimum, 49°; precipitation, 0.05 inch.

HAYS: (Report for the week ending June 10, 1933.)

Temperature, wind and evaporation conditions have been extremely severe on all crops and pastures. Alfalfa is burned crisp at a height of one foot or less. Fallow is the only method that will produce yields of oats and barley worth harvesting. Spring wheat has not commenced heading and is suffering extremely from the drought. Winter wheat, although of good height and well headed is practically burned beyond recovery. It was impossible under the extreme heat and dry wind for the wheat to extract moisture from the soil rapidly enough to maintain itself.

Maximum temperature, 106°; minimum, 57°; maximum daily evaporation, 0.675 inch.

HAYS:

Since the 12th the temperature has not been so high and there has been less wind. This relief came too late for small grain crops. Winter wheat has been prematurely ripened and the grain is badly shriveled. Extremely poor yields are expected from all plots, many of which had the appearance of excellent yields. Had cool weather prevailed during the last two weeks some good yields would have resulted in spite of the dry weather. Barley and oats have made little change since last week. Only a few more heads developed. The soil over corn and sorghum seed dried out following planting so quickly that spotted stands resulted. The two and three year alfalfa sod plots were clipped. There was not enough growth to rake for hay. The annual Field Day program was held the 15th. About 200 farmers were present. E.F.Chilcott visited the station the 15th.

Maximum temperature, 108°; minimum, 50°; precipitation, 0.22 inch.

TUCUMCARI:

Planting of dry-land plots was completed to-day, the 17th. Other work included harvesting MC B and D wheat, MCD rye, and 12 variety-date wheat plots with the mower, for straw was too short to bind; mowing, cocking, and hauling five acres of alfalfa, with 15 acres more ready to cut; taking soil moisture samples; breaking crust on a number of plots and knifing lister planted plots; and grading the road leading to highway. MCA and B rye plots were a failure, as was MCA wheat. Other plots will make low yields, but it is remarkable that any plants survived, with total precipitation October 1 to date only 3.37 inches. The yield of alfalfa hay may not average over 500 pounds to the acre, but it is of excellent quality, and bunching attachment on mower keeps hay comparatively free from dirt and trash. The only moisture of any benefit since December was a rain of 1.11 inches the night of May 31, so it seems fortunate that crops planted in early June have practically all emerged to good stands, where sufficient time has elapsed. It is likely that crops planted the past two days will not show full stand until rain is received. Many farmers are rushing planting, but some are finding the soil too dry, and others claim they have not had enough moisture to permit them to start planting. Most crops are being planted in this locality by "splitting ridges", and in most instances a fine, healthy crop of weeds is left on the shoulders of the furrows.

Maximum temperature, 100°; minimum, 53°; precipitation, 0.25 inch.

DALHART:

The dry weather continues. The total precipitation for the year to date is 1.13 inches, which has been recorded on 15 dates. No field work is possible for seed bed preparation. A few plots were plowed during the week, but large clods were thrown up. There has not been enough moisture in the soil to at any time justify seeding. We usually plan to have everything planted by this time of the year. The situation on farms and ranches is critical. There has been no native pasture this spring, and the feed supply has been exhausted on most farms for several weeks.

Maximum temperature, 101°; minimum, 54°; precipitation, 0.01 inch.

BIG SPRING:

Although temperatures have moderated somewhat during the past week, this section still remains dry. The dead line date for planting cotton with an average assurance of it maturing is now at hand. If it rains any time this month, however, there will be a large acreage planted in hopes that a late frost will allow at least partial maturity of the bolls. Emergence of station crops is very spotted. Fairly good stands have been obtained on fall and winter prepared land, but there is practically nothing up on the spring plowed plots. Cotton in the variety test and grain and forage sorghums in the June 1 date have emerged to fair stands. The June 15 date of planting cotton and sorghums was made on time, but it is probable that little or no emergence will be obtained under present moisture conditions. The winter wheat plots were threshed during the week. Yields ranged from 5.5 bushels per acre on M.C.B. to 12.7 bushels on M.C.G. These yields were low because the crop received little or no rain since last December but they were much better than was expected. Other station work consisted of knifing beds, cultivating and watering trees, and hoeing weeds.

Maximum temperature, 90°; minimum, 55°; precipitation, none.

WOODWARD:

No precipitation has been received over the past week, but cool weather has prevailed which has ameliorated conditions for wheat. That on Dry Land plots will not be ready to combine for several days, though it was expected it would be harvested the middle of this week. Wheat harvested on the Cereal plots averaged about 16 bushels. Wheat along a narrow strip from Woodward west for about 30 miles is as good as any place in the Plains. This seems due partly at least to the fact that leaves burned so much more quickly than heads or stems did. Owing to the dry condition of the soil, very few plots of sorghums have yet been planted. Although this is beyond the date when they should have been planted. If it remains dry all rotation sorghums will be planted the 18th, with the expectation of replanting by splitting row spaces immediately if rains come. In this way the best planting can eventually be saved. The Soapberry is now a mass of large panicles of creamy bloom. All winter it will hold a rich display of clear amber berries. Whatever failing the Soapberry may have it is a most reliable and satisfactory ornamental tree for the southern Plains. Germination of tree and shrubbery seed is practically completed, with satisfactory stands. Damping off in pines has been severe in spite of acid treatment of the soil and careful watering. Powdered aluminum sulphate has checked the death rate. Picking of most of the cherries has been completed. The crop was light and the berries were small due to drought. Grapes were sprayed with nicotine sulphate to control grape leaf hoppers. This treatment is very successful, providing treatment is applied when hoppers are very young. Penstemon torreyi has already enjoyed a long season of bloom which will continue for some time to come. It is very desirable with its long racemes of dainty red flowers rising to a height of 4 to 6 feet.

PENDLETON:

The first real hot weather of the season occurred this week with two days above 90°. The wheat grew rapidly during this period, the hot weather was rather favorable for the wheat in this section. The other sections of the Columbia River Basin west of Pendleton were not so well supplied with moisture, and the wheat is beginning to burn. If these areas do not receive a good rain soon, the wheat yields will be very low. In the section in which the station is located, very good and perhaps better than average yields will be obtained without further rains, that is provided we have no unseasonably hot weather during the next two weeks. Field mice and China pheasants are seriously reducing the rotation corn stands, they feed on the tender corn sprouts. All skips were patched up and they are now cleaning up the patched areas. This is the first year that we have been able to grow beets in the home garden, in previous years Curly top has completely killed all beets. Tomatoes, cucumbers, string beans, and squash are very susceptible to this disease, which is carried by one of the leaf hoppers.

Maximum temperature 97°; minimum, 41°; precipitation, none.



WEEKLY STATION REPORTS

OF THE DIVISION OF

DRY LAND AGRICULTURE

BUREAU OF PLANT INDUSTRY

U. S. DEPARTMENT OF AGRICULTURE

MAY 21 1933



REPORT FOR THE WEEK ENDING JUNE 24, 1933.

HAVRE:

Conditions during the first few days of this week were a continuation of the unfavorable weather of the previous week, but the last few days have been much more favorable. Since the 21st, conditions have been more or less showery. Many grain crops are in a bad way and on the poorer methods will show very slight recovery unless there is a large amount of rain soon. With favorable conditions yields from fallow could still be very good. Spring grains seeded early are heading rather short and flax is starting to bloom. Irrigated alfalfa is being cut. Corn is growing rapidly. Grasshoppers continue to hatch and are being poisoned on the station. A large amount of poison is also being mixed and sold by the county. Some farmers have fitted a straw spreader from a combine on a truck and are using this method of spreading the poisoned mash. There is still danger of serious damage from grasshoppers. Peonies and such perennials as delphinium and galardai bloomed during the week. Visitors included, F.B. Linfield, Clyde McKee and Louis Vinke, of the Montana State College.

Maximum temperature, 95°; minimum, 49°; precipitation, 0.74 inch.

JUDITH BASIN:

Temperatures during the week were lower than the previous week. The maximum for most days was in the seventies. Two showers occurred during the week. The first, on June 19, was accompanied by considerable hail. The hail did not do very much damage on the station, but north of the station heavy damage was reported. Work during the week included cultivation of corn, haying operations, and cultivation of the shelter belts. Visitors included, F.B. Linfield, Clyde McKee and Louis Vinke, of the Montana State College.

Maximum temperature, 91°; minimum, 44°; precipitation, 0.58 inch.

HUNTLEY:

Although beneficial rains have been received throughout the surrounding territory during the last week, the Huntley Project and adjacent benchlands have not been so favored. The continued hot and dry weather has caused serious burning in all grain crops and especially in the late-sown spring grain, much of which is drying up before heading. Winter wheat is fully headed but will need moisture to fill properly. Barley appears to be more affected by drought than the other grains in the plots. Corn is making a good growth and has largely recovered from the injuries caused by the beating rain and hail of June 6. The stands of sorgo, Sudan grass, and soybeans have increased since the plots were cultivated a week ago to break the crust. Haying operations on the dry land fields were completed early in the week. Weed control measure have been continued, and at present the fields are pretty well cleaned up. The heavy rainfall of May hindered early cultivation and the woods got a vigorous start that has taken an extra amount of labor to overcome. Hog pastures were fenced and wind damage to the field hog shelters was repaired. Maximum temperature, 100°; minimum, 54°; precipitation, trace.

SHERIDAN:

The weather continued warm and dry until the 23rd, when a 1.11 inches of rain fell in about one-half an hour. Crops continued to stand still apparently as far as growth is concerned, although early sown barley and oats began to head only a few inches from the ground, and early sown flax began to blossom. About three-fourths of the hay was gotten up in good shape with no

rain on it. Yields of alfalfa on the plots weighed ranged up to slightly over 6,000 pounds for an individual plot. Ladak yielded the best of the varieties in the close seeding as usual, individual plot yields ranging from 4,600 pounds to 4,800 pounds per acre, field cured. Peas for green manure and land from which sweetclover had been cut for hay were plowed. Hogs and sheep were weighed and turned on to peas for pasture. Run-off from the heavy rain appears to have been light on cultivated land lying fairly level. Run-off from meadows and the steeper slopes was heavy. The ravine through Field G ran full and washed out a part of the garden located there. Roadways also were damaged to some extent. A large part of a new seeding of alfalfa in field O also was washed out.

Maximum temperature, 98°; minimum, 54°; precipitation, 1.21 inches.

DICKINSON:

Moderate temperatures and light showers late in the week relieved to some extent the extreme heat and drought. Except on fallow or low ground small grains were injured by the heat of last week. The dry soil combined with grasshoppers makes the crop outlook rather doubtful. Poisoning of grasshoppers is quite general in this and surrounding counties. Although a high percentage of the hoppers are killed by the poisoning, enough survive to make the crop outlook uncertain. Fields which have been injured most are those which were in flax last year and those which were stubbled in this spring. Most fallow and spring plowed fields are relatively free of hoppers unless adjacent to badly infested fields from which the hoppers have moved. Blister beetles also have been very numerous in the district. Most of the Chinese elm trees have been defoliated. A good many Russian olive trees have also been stripped. Corn on the rotations was cultivated on the 21st and 22nd. The balance of the alfalfa and grasses were stacked during the week. Recent visitors have included, H.C.Hanson, N.Dak.Experiment Sta.; F.D.Butcher and J.R.Parker, Bureau of Entomology; C.F.Monroe, Extension Division, N.Dak. Agricultural College; and two officials of the Federal Land Bank, St.Paul, Minn.

Maximum temperature, 102°; minimum, 46°; precipitation, 0.60 inch; total precipitation June 1 to 24, 1.21 inches.

MANDAN:

Agronomy - The past week has been reasonably cool, with the exception of the 18th. A number of light showers fell, but there was not enough rain to be of lasting benefit to crops. Small grain was badly injured by the heat and drought. With good rains a fair crop might be obtained from fallow and corn ground. Corn is still in good condition and was given the second cultivation.

Maximum temperature, 106°; minimum, 50°; precipitation, 0.80 inch.

Cooperative Grazing Experiment - Pastures are badly dried up. The cattle on the smaller pastures will soon be out of feed. Bromegrass and crested wheatgrass have dried up a good deal but still contain a lot of good feed. Arboriculture - Work during the week has consisted of cultivation and hoeing of nursery fields, spraying caragana seedlings, and removing suckers from trees in the pruning experiments. Damage to trees by the severe heat the latter part of the previous week is now evident. Hardwood seedlings and numbers of trees have had their leaves badly scorched. About 50 per cent of the spruce seedlings, and 70 per cent of the pine seedlings set out in the transplant field, appear to be withered up entirely.

Horticulture - The horticultural nursery was irrigated on the 19th and 20th. All horticultural plantings are in need of rain. The hot weather in the middle of June caused considerable burning of the leaves of trees, particularly of trees that were sprayed during the hot weather. Currants and gooseberries were scalded on the plants, and about 90 per cent of the crop spoiled. Some of the bushes may die, as the leaves appear dead, but some of this injury may have been caused by spraying during the hot weather. The first strawberries were picked on June 21. Heaviest yields are being produced by Premier and Progressive. The straw mulch system is showing up to advantage. Owing to dry weather, the berries are not up to their usual standard in size and quality. Juneberries are also ripening. A fairly heavy crop will be produced. Cultivating and hoeing has been in progress in the vegetable plots. Corn and tomatoes are still holding their own vegetatively. Tomatoes have so far failed to set fruit, although blossoms appear fairly abundant. Vegetables in the gardens are showing effect of heat and drought in marked degree. Peas and cauliflower, normally in season at this time, are almost worthless. Green sprouting broccoli, beets, and lettuce promise fairly good yields. Lettuce varieties such as Mignonette and Hanson produced a good crop of fine heads, but Salamander and Big Boston "balled" and spoiled from the effects of heat. A few late varieties of peonies, such as E. B. Browning, Phillippe Revoire, and Milton Hill, still add a bit of color to beds and borders. Lillium umbellatum and Hemerocalli fulva add a needed bit of orange color in their respective locations. Trees and shrubbery after pruning now present a fairly respectable appearance. A.L.Ford and R.E. Johnston, S.Dak.State College, Leonard Noble, County Agent, Corson Co., S.Dak., Ben Schaub, County Agent, Dewey Co., S.Dak., U.T.Norgaard, County Agent, Sully Co., S.Dak., J.R.Parker and T.D.Butcher, Bureau of Entomology visited the station during the week, as did also a large number, (100 or more) of the Morton County 4-H Clubs in charge of County Agent R.C.Newcomer, and the students of the West Hope (N. Dak.) High School.

BELLE FOURCHE:

Hot, dry weather the forepart of the week was followed by more moderate temperatures. Showers were received on June 21 and 23, but the precipitation was not sufficient to be of any material benefit, except that the moisture and the cooler weather have retarded the burning of crops. Early seeded small grains on the heavier soils have been burning badly, but a good rain at present would prevent serious damage to crops on lighter soils. Barley has been unable to head completely, and oats are heading rather slowly, but otherwise neither crop shows signs of suffering extensively from lack of moisture. Corn and sorgo have made a very rapid growth, and potatoes are just up. All sod plots to be cropped to flax in 1934 were plowed. Other field work has consisted chiefly of cultivating row crops and alleyways.

Maximum temperature, 99°; minimum, 53°; precipitation, 0.55 inch.

ARCHER:

The weather has been warm and dry. A few local thunder showers occurred, but none of importance at the station. Corn and beans have made good growth. Other crops are in need of rain. Vaughn barley has started to head, and other small spring cereals are jointing. Work at the station has consisted of cultivating corn and fallow land, hoeing weeds among the trees, cleaning the dairy yards, and painting the new granary.

Maximum temperature, 90°; minimum, 49°; precipitation, 0.09 inch.

AKRON:

Two small showers during the week were insufficient to help the growing crops to any appreciable extent. The weather has been slightly cooler. Barley on the rotations is in full head; oats are in full head except on a few plots where drought has stopped all growth; and spring wheat is heading but must have rain soon or it will be almost a complete failure. Corn and sorghums are making rapid growth. The corn on the rotations, the rate and spacing corn project, and the corn varietal test was thinned to uniform or specified stands during the week. Other work was cultivating corn, hoeing weeds out of the corn and sorghum plots, and cleaning the weeds out of the orchard. The small grains on the forage belt were harvested for hay the latter part of the week. D.W. Robertson, Colo. Agricultural College, visited the station on the 19th and 20th.

Maximum temperature, 94°; minimum, 49°; precipitation, 0.35 inch.

NORTH PLATTE:

Warm, dry weather has continued. All spring grains are in full head and suffering considerably from lack of moisture. They are being kept alive by moisture drawn from considerable depths in the subsoil. This is not adequate to supply the needs of the plants during the middle of the day when temperatures are high. The plants revive at night and look fresh in the morning. Development is practically at a standstill, and, unless rain comes immediately, the grain will be of very poor quality. The few plots of winter wheat that were not abandoned are ripening rapidly, except where the stands are light. Some harvesting will be done during the coming week. Listed corn furrows were closed by the second cultivation, and no further cultivation will be given unless the ground is packed by rain. Fallows have been plowed during the week. Grasshoppers are numerous enough to do considerable damage, but there is less alarm here than in some sections of the state, and no poisoning has been done.

GARDEN CITY: (Report for the two weeks ending June 24, 1933)

The period from June 10 to 20 was hot, very dry, and windy. Much of the wheat is burned to the place where it shows an advanced ripened condition. The grain is shriveled and heads are very poorly filled. Spring grains proved a total failure some time ago. Much of the milo and kafir planted by the first of June is still in the ground ungerminated. Stands are very uneven, and it is quite possible that much of the row crops will mature so late that frost will damage them. On June 20 we had 0.20 inch of rain. On the 21st 1.18 inches fell in a hard driving rain. Considerable run-off took place, but the soil is wet enough to cause germination of the remaining milo and kafir. It is very doubtful if the rain will help the wheat. Cultivation of some plots was started on the 20th and more of them were finished June 24. Weeds are coming fast. Regardless of how dry the soil gets thistles seem to start and do well. Thinning of kafir that came up to a good stand from the first planting was started on the 23rd.

Maximum temperature, 105°; minimum, 52°; precipitation, 1.38 inches.

HAYS:

Drought continues except for a shower the middle of the week, which was too small to be of much value. It was not enough to complete germination of sorghums planted early in June. Temperatures have not been so extreme, which has slowed up the ripening of the wheat. Combine harvesting will begin on the station the first of next week. There has been little change in the condition of oats and barley during the week - just a few more heads emerging.

Oats and barley will be so short it now looks as if they would have to be harvested with a mowing machine. It probably will be ten days before barley or oats will be mature. Chinch bugs are becoming numerous in the barley plots especially, and now threaten the row crops as soon as the barley and oats are harvested. Work during the week has consisted of thinning corn and sorghums and getting machinery ready for harvest. Four winter wheat plots were harvested with the binder. All other wheat plots will be harvested with a combine. Maximum temperature, 99°; minimum, 60°; precipitation, 0.45 inch.

TUCUMCARI:

Two rains during the week, 0.53 inch and 0.48 inch brought the total for the year to date to 3.08 inches. Surface moisture is abundant, but penetration is comparatively shallow. Preparation of increase land for planting, planting of some rowed and drilled increase land, and planting of late cooperative plots was performed. There remains a day or two of work before increase plantings will be completed. Stands have emerged promptly and satisfactorily in most instances. No thinning has been done, but a number of plots are approaching thinning stage. After a light cutting of alfalfa was made, the crop being produced in spite of only 1.97 inches precipitation in eight months, the spring-tooth-harrow was run over the land, followed by the smoothing harrow, run cross-wise of the rows. This cultural work apparently greatly revived the plants, as well as killed many weeds.

Maximum temperature, 90°; minimum, 61°; precipitation, 1.01 inches.

DALHART:

A rain of 0.46 inch on the night of the 19th was insufficient for planting. It did permit working the ground which was too rough for planting. This working, whether with the spike-tooth-harrow or with the disk, mixed the wet and dry soil together so that stands could not be secured. The first impression after the shower was that it would be possible to plant without furrow openers and get good germination. Quite likely this could have been done if seed beds could have been prepared earlier. The May 15 date-of-planting is showing scattered emergence. An examination of the soil moisture shows that this shower penetrated, on an average, 3 inches in loose ground and that the surface 1.5 inches has already evaporated. Several rains of an inch or more have fallen in each direction from the station, one within four miles. Farmers in these areas where rains have fallen during the week were just now starting spring planting. It is too late now to expect full maturity of the row crops ordinarily planted. Threshing of wheat and rye plots was completed during the week. Wheat and rye on fallow made approximately 3 bushels per acre. Wheat on other preparations was a failure. Yields of the four varieties of winter wheat on fallow were almost identical, ranging from 10 to 11 bushels and testing from 50 to 54 pounds. The four varieties were Turkey, Blackhull, Tenmarq, and Kanred. This is the first time since the station was established that rains have failed to come in time to furnish moisture for planting. The total rainfall for the year to date is now 1.62 inches. Since July 1, 1932, the total rainfall has been 8.10 inches.

Maximum temperature, 93°; minimum, 63°; precipitation, 0.49 inch.

BIG SPRING:

This has been another dry week. Temperatures have been comparatively cool with no excessive wind movement. These conditions have tended to reduce evaporation and thus conserve what soil moisture there is. Soil moisture samples taken on the M.C. milo plots indicate that soil moisture conditions below the first foot are fairly satisfactory. If enough rain could be obtained to get crops up and established, it would not require much rain during the rest of the summer to mature a fair crop with the subsoil moisture that is now stored up. The soybean varieties were fenced this week to prevent injury by rabbits. Knifing a block of milo and cowpeas and some other blocks was accomplished this week.

Maximum temperature, 98°; minimum, 62°; precipitation, none.

LAWTON: (Report for the two weeks ending June 24, 1933)

Two showers amounting to 0.25 inch on June 11 and 12 were followed by a week of comparatively cool temperatures that were favorable to row crops. The total precipitation of 0.37 inch during the month May 24 to June 24 and the scorching temperatures of 94° to 104° since June 20 leave but little to hope for in the form of a corn crop or from the vegetable gardens on the farms throughout the county. Growth of sorghums is at a stand still, and the plants are heavily infested with chinch bugs. Broomeorn is already showing severe injury. Some of the early maturing sorghums in the April 15 planting are heading, and some bagging has been done. Sweetclover in cultivated rows is wilting daily and shows an acute need of moisture. Sorghum thinning, cotton chopping, and threshing of all experimental plots of small grains, except a few seed plots, were completed during the past week. Interest in the Governmental reduction plan of the cotton acreage is quite active, and it appears likely that the cotton growers will sign up for the quota to be destroyed in this section of the State within the specified time.

WOODWARD:

There has been no rain over the past week, and there has been a resumption of high temperatures. Farmers report that the soil dries out so rapidly when row crops are planted that they fail to germinate. It has been noted on the station that when new runners were used and the seed deposited in a narrow slit with firm, moist soil on both sides it has germinated readily. Where old runners were used and the seed deposited in a comparatively wide groove and covered with loose soil it failed to germinate. Needless to say, the runners on most farm listers are too worn to be of much service. Ordinarily this is of far less importance than this year. In sandy soil which resumes almost its normal firmness when disturbed germination has been far better than in tight land where soil remains loose and dries out when planted during a drought. The most attractive ornamental at present is the hybrid bignonia, Mme. Gallen, a chance cross between the native and the Chinese trumpet-creepers. The flowers are large and showy, with delicate shades of reds and yellows blending. It blooms over two months. Shrubbery and trees which have roots well established in the heavy subsoil under the sandy surface few feet are as yet showing little effect of drought. Those not yet established need frequent watering. Work of the week has consisted largely of harvesting rotation wheats and threshing the Cereal nursery.

Maximum temperature, 102°; minimum, 64°; precipitation, none.

PENDLETON:

Weather for the week has been favorable for all crop growth. The peas, rye, and sweetclover were plowed under this week for green manure. The peas and rye were about 36 inches tall, and it was necessary to disk the peas before plowing. In the continuously wheat and fertilizer experiment the plots receiving an application of fertilizer are beginning to burn, this is the first time this type of burning has occurred.

Maximum temperature, 84°; minimum, 39°; precipitation, none.